

Approved by OMB
3060-0678

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
AC BidCo E120106 STA Request for Intelsat 37e at 18 WL May 2018

1. Applicant

Name: AC BidCo LLC Phone Number: 312-517-5566

DBA Name: Fax Number:

Street: 111 N Canal St., Suite 1500 E-Mail: melias@gogoair.com

City: Chicago State: IL

Country: USA Zipcode: 60606

Attention: Marguerite Elias

60 days with conditions



File # SES-STA-20180525-00823

Call Sign E120106 Grant Date 06/11/2018
(or other identifier)

Term Dates

From: 06/11/2018 To: 08/10/2018

Approved: *Marguerite Elias*

2. Contact	
Name: Karis Hastings	Phone Number: 202-599-0975
Company: SatCom Law LLC	Fax Number:
Street: 1317 F Street, N.W. Suite 400	E-Mail: karis@satcomlaw.com
City: Washington	State: DC
Country: USA	Zipcode: 20004 -
Attention:	Relationship: Legal Counsel
(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)	
3. Reference File Number or Submission ID	
4a. Is a fee submitted with this application? <input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114). <input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee <input type="radio"/> Other (please explain):	
4b. Fee Classification CGB – Mobile Satellite Earth Stations	
5. Type Request <input type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input checked="" type="radio"/> Other	
6. Requested Use Prior Date 06/15/2018	
7. City/Mobile 8. Latitude (dd mm ss.s h) 0 0 0.0	

9. State	10. Longitude (dd mm ss.s h) 0 0 0.0
11. Please supply any need attachments. Attachment 1: STA Narrative Attachment 2: Attachment 3:	
12. Description. (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) <div style="border: 1px solid black; padding: 5px;">AC BidCo LLC respectfully requests special temporary authority for 60 days commencing on or before June 15, 2018, to allow ESAA terminals to communicate in the conventional and extended Ku-band frequencies with the U.S.-licensed Intelsat 37e satellite, call sign S2972, at 18 deg. W.L. Authority is sought pending submission of and action on a</div>	
13. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application"; party to the application; for these purposes. Yes <input checked="" type="radio"/> No <input type="radio"/>	
14. Name of Person Signing Marguerite Elias	15. Title of Person Signing Exec. Vice President and General Counsel
WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).	

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12. Description

AC BidCo LLC respectfully requests special temporary authority for 60 days commencing on or before June 15, 2018, to allow ESAA terminals to communicate in the conventional and extended Ku-band frequencies with the U.S.-licensed Intelsat 37e satellite, call sign S2972, at 18 deg. W.L. Authority is sought pending submission of and action on a modification application being prepared to add Intelsat 37e as an authorized point of communications. See attached narrative.

REQUEST FOR SPECIAL TEMPORARY AUTHORITY

AC BidCo LLC (“AC BidCo”), which holds a license to operate an earth station aboard aircraft (“ESAA”) network,¹ hereby requests special temporary authority (“STA”) for a period of 60 days commencing no later than June 15, 2018, to permit up to 100 AeroSat model HR6400 ESAA terminals and up to 100 ThinKom model 2Ku terminals to communicate in the conventional and extended Ku-band frequencies with the U.S.-licensed Intelsat 37e satellite at 18° W.L.² Grant of the requested STA will serve the public interest by allowing AC BidCo to respond to customer demand for additional capacity on flights over Europe. AC BidCo is preparing an application to modify its ESAA license to add Intelsat 37e as an authorized point of communications, and seeks STA pending submission of and action on that modification application.

Background

AC BidCo is currently authorized to operate two types of Ku-band terminals, AeroSat model HR6400 antennas designated as AES1 on the AC BidCo ESAA License and ThinKom model 2Ku antennas designated as AES2 on the license, with specified satellites for ESAA service in U.S. airspace, foreign airspace, and the airspace over international waters. AC BidCo’s license was issued based on demonstration that the proposed network would enhance competition in the provision of in-flight broadband service to air travelers and airline crew members and that the planned operations were fully consistent with technical standards designed to ensure protection of other authorized communications networks. In order to enhance and expand its ESAA operations, AC BidCo is preparing an application to modify the AC BidCo ESAA License to update the satellites authorized as points of communication for the AC BidCo network.

STA Request

AC BidCo requests STA to commence communications with Intelsat 37e in the near term while it is completing preparation of the upcoming modification application. AC BidCo seeks authority to use Intelsat 37e capacity for ESAA operations on a primary basis in the 14-14.5 GHz uplink spectrum and on an unprotected basis in the 10.95-11.7 GHz downlink spectrum, consistent with the Intelsat 37e License and with the Commission’s orders in the ESAA

¹ Call Sign E120106, File No. SES-MFS-20171220-01351, granted Mar. 9, 2018 (the “AC BidCo ESAA License”).

² Call Sign S2972, File No. SAT- LOA-20160915-00089, granted June 8, 2018, as corrected June 13, 2017 (the “Intelsat 37e License”).

proceeding.³ AC BidCo also seeks authority to use Intelsat 37e capacity for ESAA operations on a nonconforming basis in the 12.5-12.75 GHz downlink spectrum. Communications with the satellite will be supported by an Intelsat teleport in Hagerstown, MD, call sign E040414.

Intelsat 37e will provide coverage of Europe. In support of this STA request, AC BidCo is attaching a letter confirming that operation of the AC BidCo ESAA terminals is consistent with coordination agreements with satellites operated within six degrees of Intelsat 37e.

The technical parameters of the proposed operations with Intelsat 37e are provided in the following table:

Antenna	Maximum EIRP Density Per Carrier (dBW/4 kHz)	EIRP (dBW)	Emission Designator
AES 1	14.27	45.0	1M84G7D
AES 2	14.17	45.0	1M84G7D

AC BidCo requires the ability to use additional capacity in Europe on an urgent basis to accommodate increased demand for data capacity that cannot be met by the existing wide-beam spacecraft AC BidCo uses for European coverage. AC BidCo's existing European capacity is heavily utilized, and adding the Intelsat 37e high-throughput satellite will allow AC BidCo to supplement this capacity in order to ensure a high quality of service and allow AC BidCo to continue to compete effectively in the ESAA market. AC BidCo does not propose to use the satellite for ESAA operations in U.S. airspace.

AC BidCo emphasizes that the scope of this STA request is limited. AC BidCo is only seeking authority to add Intelsat 37e as an authorized point of communication for a limited number of ESAA terminals. AC BidCo is otherwise prepared to operate consistently with the terms and conditions set forth in the existing AC BidCo ESAA License. In addition, AC BidCo is willing to operate pursuant to the STA on an unprotected, non-harmful interference basis.

³ *Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary-Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14-14.5 GHz Frequency Bands*, Notice of Proposed Rulemaking and Report and Order, IB Docket Nos. 12-376 & 05-20, 27 FCC Rcd 16510 (2012) ("ESAA Order"); Second Report and Order and Order on Reconsideration, IB Docket No. 12-376, 29 FCC Rcd 4226 (2014) ("ESAA Second Order," and with the ESAA Order, the "ESAA Decisions").

Waiver Requests

AC BidCo seeks a limited waiver of the Commission's rules in connection with its request for an STA to add Intelsat 37e as an authorized point of communication for the AC BidCo ESAA network. Specifically, AC BidCo requests a waiver of the Table of Allocations in Section 2.106 to permit ESAA operations with Intelsat 37e in the 12.5-12.75 GHz spectrum outside the United States. Grant of this waiver is consistent with Commission policy:

The Commission may waive a rule for good cause shown. Waiver is appropriate if special circumstances warrant a deviation from the general rule and such deviation would better serve the public interest than would strict adherence to the general rule. Generally, the Commission may grant a waiver of its rules in a particular case if the relief requested would not undermine the policy objective of the rule in question and would otherwise serve the public interest.⁴

AC BidCo requests waiver of the Table of Allocations in Section 2.106 of the Commission's rules to permit use of downlink spectrum in the 12.5-12.75 GHz band for ESAA operations. The Commission's ESAA Decisions modified the Table of Allocations to permit ESAA operations in the conventional Ku-band, as well as in the 10.95-11.2 GHz and 11.45-11.7 GHz segments of the extended Ku-band. The Commission acknowledged that ESAA operators may also wish to use other downlink spectrum, particularly for reception of transmissions from space stations with little or no U.S. coverage.⁵ Although the Commission had not requested comment on changing the allocation status of this downlink spectrum, it specifically contemplated that access to such spectrum could be granted "on a case-by-case basis under Part 25 licensing rules."⁶ For example, the Commission has authorized AC BidCo and other ESAA providers to receive signals in the 12.2-12.75 GHz band.⁷

Consistent with these past rulings, AC BidCo requests a waiver of the Table of Allocations to permit its terminals to receive transmissions from Intelsat 37e in the 12.5-12.75 GHz band. As noted above, AC BidCo does not propose to use Intelsat 37e in U.S. airspace, and Intelsat has confirmed that AC BidCo's proposed ESAA operations are consistent with Intelsat's coordination agreements with satellites within six degrees. Authorizing AC BidCo to receive signals from Intelsat 37e will not alter the technical characteristics of the

⁴ *PanAmSat Licensee Corp.*, 17 FCC Rcd 10483, 10492 (Sat. Div. 2002) (footnotes omitted).

⁵ *See ESAA Order* at n.43.

⁶ *Id.*

⁷ *See, e.g.*, AC BidCo Blanket License, Section B (authorizing use of the 12.2-12.75 GHz band); *Panasonic Avionics Corporation*, File No. SES-MFS-20170312-00255, Call Sign E100089, granted July 26, 2017, Section B (authorizing use of the 10.7-12.75 GHz band).

satellite's operations in any way, and therefore will not create harmful interference to other authorized users of the spectrum. Furthermore, AC BidCo will not claim interference protection from such authorized users. Under these circumstances, grant of a Section 2.106 waiver is justified to permit use of the 12.5-12.75 GHz band for downlinks from Intelsat 37e.

Public Interest Showing

Grant of the requested STA is consistent with Commission policy and will not adversely affect other authorized operations. AC BidCo's proposed operations with Intelsat 37e are consistent with Intelsat's coordination agreements with adjacent satellite operators and will also conform to the terms of AC BidCo's agreements with the National Science Foundation and the National Aeronautics and Space Administration. In addition, AC BidCo will comply with power flux density limits to protect terrestrial services outside the U.S.

Grant of the proposed STA will allow AC BidCo to meet immediate demand for additional capacity over Europe, promoting competition in the provision of aeronautical services and expanding the availability of in-flight broadband to air travelers and crew members.

AC BidCo understands that any Commission grant of this STA will be without prejudice to the ultimate determination the Commission will make regarding AC BidCo's future modification application. In addition, AC BidCo acknowledges that any action taken pursuant to a grant of the requested STA will be at AC BidCo's own risk.

Applicant: AC BidCo LLC
Call Sign: E120106
File No.: SES-STA-20180525-00823
Special Temporary Authority (STA)

AC BidCo LLC (“AC BidCo”) is granted STA for 60 days to operate up to 100 earth station aboard aircraft (ESAA) terminals (0.74 meter ThinKom, model 2KuAntenna) and up to 100 ESAA terminals (0.24 meter AeroSat model HR6400 antenna) to communicate with the U.S. licensed geostationary orbit (GSO) satellite Intelsat 37e (Call Sign S2972) located at orbital location 18° W to provide ESAA service in Europe and not in the U.S. airspace. Operations in the 14.0-14.5 GHz (Earth-to-space), 10.95-11.7 GHz (space-to-Earth), and 12.5-12.75 GHz (space-to-Earth) frequency bands are subject to the following conditions:

1. Operations are on an unprotected and non-harmful interference basis. AC BidCo must cease operations immediately upon notification of such interference and must immediately inform the Commission, in writing, of such an event.
2. Operation pursuant to this authorization must be in compliance with the terms of AC BidCo’s coordination agreements with the National Science Foundation and the National Aeronautics and Space Administration pertaining to operation of ESAAs in the Ku-Band.
3. Operation pursuant to this authorization outside the United States in the 14.0-14.5 GHz band must be in compliance with the provisions of Annex 1, Part C of Recommendation ITU-R M.1643, with respect to any radio astronomy station performing observations in the 14.47-14.5 GHz band.
4. The use of the band 10.7-11.7 GHz (space-to-Earth) in the fixed-satellite service by the geostationary satellite orbit shall be limited to international systems, i.e. other than domestic systems. See United States Table of Frequency Allocations 47 C.F.R. § 2.105, International Footnote NG52.
5. When operating in international airspace within line-of-sight of the territory of a foreign administration where Fixed Service networks have a primary allocation in the 14.0-14.5 GHz band, an ESAA must not operate in a manner that would produce predicted ground-level power flux density (pfd) in such territory in excess of the following values unless the foreign administration has imposed other conditions for protecting its FS stations: $-132 + 0.5 \times \text{THETA}$ dB(W/(m² MHz)) for $\text{THETA} \leq 40^\circ$; -112 dB(W/(m² MHz)) for $40^\circ < \text{THETA} \leq 90^\circ$. Where: THETA is the angle of arrival of the radio-frequency wave in degrees above the horizontal, and the aforementioned limits relate to the pfd and angles of arrival that would be obtained under free space propagation conditions.
6. Operation pursuant to this authorization must conform to the terms of coordination agreements between the operator of SES-3 and operators of other Ku-band

geostationary satellites within six angular degrees of SES-3. In the event that another GSO Fixed-Satellite Service (FSS) space station commences operation in the 14.0-14.5 GHz band at a location within six degrees of this space station, ESAAs operating pursuant to this temporary authority shall cease transmitting to that space station unless and until such operation has been coordinated with the new space station's operator or AC BidCo demonstrates that such operation will not cause harmful interference to the new co-frequency space station.

7. AC BidCo must operate in accordance with the off-axis EIRP spectral densities supplied to Intelsat in obtaining the satellite operator certification for Intelsat 37e. AC BidCo shall automatically cease emissions within 100 milliseconds if the ESAA transmitter exceeds the off-axis EIRP spectral-densities supplied to the target satellite operator and transmission shall not resume until AC BidCo conforms to the off-axis EIRP spectral densities supplied to the target satellite operator.
8. AC BidCo must take all necessary measures to ensure that the operation authorized does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR 1.1307(b) and 1.1310. Measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Requirements for restrictions can be determined by predictions based on calculations, modeling or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers.
9. The licensee shall ensure installation of terminals on aircraft by qualified installers who have an understanding of the antenna's radiation environment and the measures best suited to maximize protection of the general public and persons operating the aircraft and equipment. A terminal exhibiting radiation exposure levels exceeding 1.0 mW/cm² in accessible areas, such as at the exterior surface of the radome, shall have a label attached to the surface of the terminal warning about the radiation hazard and shall include thereon a diagram showing the regions around the terminal where the radiation levels could exceed 1.0 mW/cm².
10. AC BidCo must maintain a U.S. point of contact available 24 hours per day, seven days per week, with the authority and ability to terminate operations authorized herein. AC BidCo must submit a letter to be included in its license file with the name and telephone number of the point of contact prior to commencing operation.
11. ESAAs authorized herein must employ a tracking algorithm that is resistant to capturing and tracking adjacent satellite signals, and each station must be capable of inhibiting its own transmission in the event it detects unintended satellite tracking.
12. ESAAs authorized herein must be monitored and controlled by a ground-based network control and monitoring center. Such stations must be able to receive "enable



INTELSAT.

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May 24, 2018

Federal Communication Commission
International Bureau
445 12th Street SW
Washington, DC 20554

Re: Engineering Certification of Intelsat for Intelsat 37e Satellite

To Whom It May Concern:

This letter certifies that Intelsat is aware that AC BidCo LLC ("AC BidCo") is planning to seek a modification to its blanket authorization, from the Federal Communications Commission ("FCC"), to operate the Ku-band transmit/receive terminals AES1 and AES2 for the provision of Aeronautical Mobile Satellite Service (Call Sign E120106). AC BidCo seeks additional authorization for these aeronautical Ku-band earth stations to also utilize Intelsat 37e at 18W, under the current rules for Earth Stations Aboard Aircraft (ESAA), including Section 25.227.

Intelsat certifies that the use of the ESAA transmit/receive terminals AES1 and AES2 by AC BidCo, installed and operated in accordance with the AC BidCo application and the above conditions, is consistent with existing coordination agreements with all adjacent satellite operators within +/- 6 degrees of orbital separation from Intelsat 37e. Intelsat also acknowledges that the use of the above referenced terminals by AC BidCo has the potential to receive harmful interference from adjacent satellite networks that may be unacceptable.

If the FCC authorizes the operations proposed by AC BidCo in its application, Intelsat will include the power density levels, as described above, in all future satellite network coordinations with other adjacent satellite operators. AC BidCo shall comply with all such coordination agreements reached by the satellite operators.

Sincerely,



Alexander Gerdenitsch
Manager, Spectrum Policy, Americas
Intelsat

5/24/2018

Date